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SURGICAL TREATMENT

OF

ABSCCESS OF THE LIVER.

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THE SURGICAL TREATMENT OF ABSCESS OF THE LIVER.

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THE consideration of the surgical treatment of hepatic abscess has claimed the attention of able men from the days of Hippocrates to the present, and the most opposite views have been, and to some extent, are still held in regard to it. Some distinguished authors, as Drs. Budd, Lowe, and formerly Dr. Maclean, deprecated all operative procedures, and preferred to trust the case to nature; fearing the entrance of air into the cavity of the abscess, if it was opened externally: but most authorities are now agreed upon the propriety of surgical interference, amongst whom are Frerichs, Murchison, Waring, Cameron, and many others. Dr. Flint says: "Budd and others advise to let the abscess open spontaneously for fear of the entrance of air; but air does little or no harm if the opening be free, and is not excluded when the opening is spontaneous." This opinion is similar to that entertained by Dr. Sayre in regard to the joints. He says: "I am not afraid of air; but I fear imprisoned air. Therefore if compelled to make an opening which will permit the entrance of air, at once make it large enough, and in such a position that the air can get out again. * * *

If, on puncturing the joint, you find the fluid which it contains has become converted into pus, then, instead of leaving it with a simple puncture, make a free incision, always cut-



ting at the most dependent part of the sac, so that there shall be no possibility of secretions being pocketed or otherwise retained." This opinion, I believe, will hold good in abscesses of all kinds wherever found; and it is a fact, that in many abscesses of the liver, a limiting membrane of connective tissue is formed, which completely isolates the collection, and converts it into an abscess similar to those occurring in any other portion of the body. Though surgeons are pretty well agreed as to the necessity for puncturing the liver, they are by no means in accord as to the methods to be employed. Recoveries have followed every method of operating, even when no precautions had been taken either to prevent the entrance of air, or to secure the drainage of the cavity.

The introduction of the aspirator by Dieulafoy threw much light both upon the diagnosis and treatment of hepatic abscess, and it was ardently hoped that this method would supercede all others. Maclean early became a convert to its use, and employed it with much satisfaction in several cases. Surgeon Major E. H. Condon (*Lancet*, August and September, 1877) advocates the employment of the aspirator, and details several cases treated by aspiration. From Dr. Condon's valuable paper we begin to see, what has been amply confirmed since, that the aspirator is sufficient for the cure of small abscesses, but that it ought not to be relied upon for the cure of large collections. In one of his cases 400 ounces of pus were evacuated in twenty-six aspirations, but the man finally died of exhaustion. Isolated cases occur here and there, in which abscesses of considerable size have been cured by aspiration, and in the *Lancet*, December 1, 1877, Dr. Jas. Ball, of London, records a case cured in two operations, the whole amount of pus being $51\frac{1}{2}$ ounces. Another objection to aspiration is well exemplified in Dr. Condon's cases—viz., the liability of the needle to become plugged with

shreds of gangrenous liver tissue, which prevents the complete evacuation of the cavity. The experience of Dr. Hammond in regard to the frequent co-existence of cerebral hyperæmia, insomnia, melancholy, and indigestion, with hepatic abscess, leads him to recommend aspiration, not only when fluctuation is perceived, but also in all cases of hypochondria, and melancholy, even when there are no symptoms pointing to disease of the liver. This statement caused much comment amongst the medical profession of this country; and whilst Dr. Sims confirms the views of Dr. Hammond, Dr. Coles declares that no one is justified in puncturing the liver unless he has reasonable supposition that it is the seat of abscess. This, however, allows much latitude for the exercise of individual diagnostic powers, and as the exploration of the liver by the aspirating needle is scarcely painful, and is entirely free from danger, and has been attended by markedly favorable results; notably so in the case of Dr. E. S. Gaillard, editor of *Gaillard's Medical Journal*, I cannot agree with the adverse criticism of Dr. Coles. Most of the abscesses operated upon by Dr. Hammond were of small size, and were readily cured. When the abscess is large the aspirator ought not to be relied upon; on the contrary, hydatid cysts of all sizes yield with much greater certainty to aspiration than does abscess. Aspiration being free from danger, but generally unsuccessful, we have our choice whether to puncture with a trocar and canula or to make an incision into the organ.

Dr. Davis divides operative measures into three classes—
1. Those which are performed only when adhesions have formed; 2. Those in which it is sought to secure adhesions before operating; 3. Those in which the presence or absence of adhesions is disregarded. The older surgeons were much concerned about the adherence of the liver to the abdominal walls. Annesley only operated when satisfied that adhesions

had formed. Bégin made an incision directly down to the liver through the peritoneum, then stuffed the wound with charpie and awaited adhesions before puncturing. Graves cut down to the peritoneum and stuffed the wound; whilst Horner cut down to the liver and connected its capsule to the edges of the wound by sutures, then plunged in a trocar and let the canula remain *in situ* for several days. Recamier secured adhesions by successive cauterizations with potassa fusa; and Trousseau by puncturing with acupuncture needles over the seat of the abscess. Frerichs recommends making an incision through the abdominal walls, dressing the wound with charpie, and awaiting adhesions before opening the abscess.

Besides the fear that pus would escape into the peritoneal cavity from the lack of adhesions between the liver and the diaphragm; the entrance of air into the sac was also a great bugbear. I have already adduced the evidence of Dr. Flint and Dr. Sayre as to the innocuousness of this result, when the opening is sufficiently free to allow its ready escape.

Dr. Furnell says further, in regard to this point: "Puncturing the liver is a comparatively safe proceeding; and when none but the most ordinary precautions are taken, entrance of air does not invariably take place." A great advance in the treatment of wounds and abscesses of all kinds was the introduction of the drainage tube, and the injection of the cavities with antiseptic solutions. Amongst the first, if not the very first, to apply these principles to abscess of the liver was Dr. Jimenez, of Mexico (quoted by Dr. Davis), who punctured the liver in an intercostal space, without any reference to whether there were adhesions or not; though he preferred there should be none, because when non-adherent the abscess cavity is compressed on all sides, and a gradual closing of its walls takes place. He punctured

with a trocar, evacuated the pus, introduced a drainage tube through the canula, and employed carbolized or iodized injections; but took no further antiseptic precautions. Very great success followed this treatment. He believed there was no danger of the escape of pus into the peritoneal cavity, when the puncture was made in an intercostal space. On the other hand, Dr. Furnell points out the danger of opening abscesses in the intercostal spaces, believing that the parts do not contract, and the objection made by Mr. Lowe, "that air invariably enters, and the renewal of inflammation and of fever may end in gangrene," holds pretty well of puncture made here. He also recognizes the principle of thorough drainage in its application to liver abscess, but not to the same extent as do Drs. Jimenez, Davis and others. He says: "When antiseptic precautions are taken, and squeezing avoided, simple incision by scalpel, followed by puncture with the trocar, is preferable to aspiration; and that keeping the wound open by a piece of carbolized lint is preferable to allowing the canula to stay in as recommended by Murchison, Fayrer, and others." He does not appear to have used carbolized injections into the abscess; and it is difficult to understand why he should use carbolized lint instead of the ordinary drainage tube, which permits more thorough drainage and allows injections as well. I believe Furnell's objection to squeezing a hepatic abscess to be well taken, as the atmospheric pressure is abundantly able to empty the cavity, and will do so gradually, and without bruising the liver tissue. The high authority of Drs. Moorehead and Jackson is also against pressure upon the walls of the abscess.

I could adduce many successful cases of operation followed by the introduction of a drainage tube, and the systematic cleansing of the cavity by carbolized injections, which are recorded in various recent journals, but will only

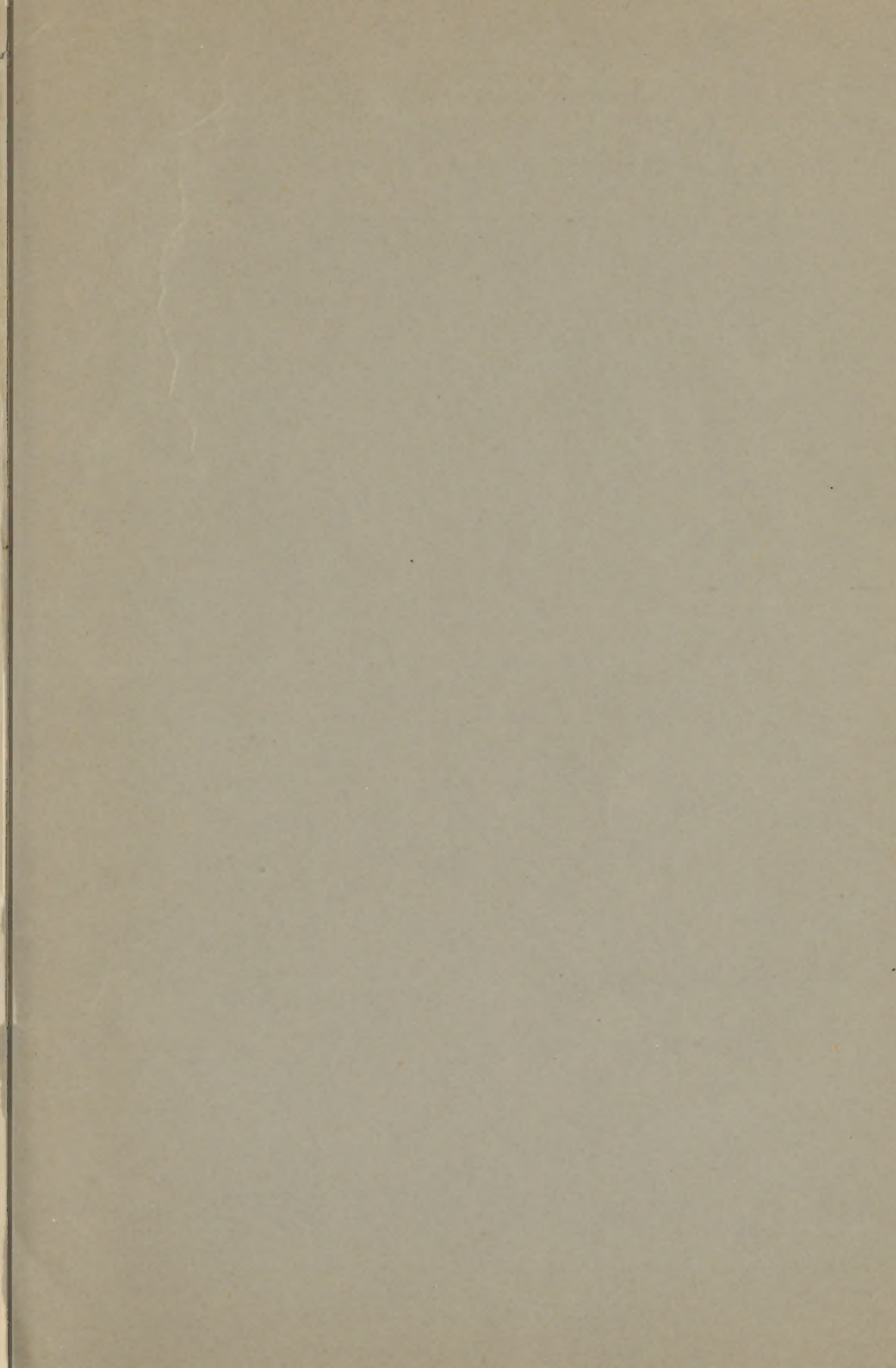
mention two cases reported to the *Academie de Médecine* of Paris, late in 1880. One of these was presented by M. Guerin, who first aspirated; afterwards, when the abscess refilled, inserted a trocar, and when the contents were drawn off introduced a rubber drainage tube and washed out the cavity. Eventually two calculi passed through the wound, and the man recovered. The other case was reported by M. Depaul, who made a large incision into the liver, evacuated 400 grammes of excessively fetid pus, and afterwards washed out the cavity with Labarraque's solution and marsh mallow water. In five or six days the fetidity of the pus diminished, and he made a rapid recovery.

The brilliant results obtained by Prof. Lister, and others by that peculiar system of dressings, which are now known as Listerian, has naturally suggested their employment in abscess of the liver. In an interesting article in the *London Lancet*, May 8, 1880, Sir J. Fayrer says he has punctured liver abscesses, and washed out the cavity with carbolized solutions with good results, but is convinced that puncture under the spray, the introduction of a drainage tube, and full Listerian dressings are preferable, and that neither washing out the cavity nor pressure is needed. In one case, Lister had himself operated upon a case of Fayrer's, and not a trace of pus formed afterwards; the patient making a speedy recovery. Prof. Maclean, in the *British Medical Journal*, also advocates puncture of the liver under the spray, and the employment of Listerian dressings; and his testimony is the more valuable, as he was, only a few years ago, opposed to all surgical interference.

This method of treating hepatic abscess has also found an earnest advocate, in M. Rochard, of Paris, who read an instructive paper before the French Academy of Medicine, in October, 1880, upon this subject. He says a large incision parallel with the direction of the ribs should be made, the

cavity of the abscess washed out with carbolized water until thoroughly cleansed, a large drainage tube inserted, and the whole covered with Lister's full dressing; the dressings are to be removed daily, the tube taken out, cleaned and, after being shortened, re-introduced. This method was advocated by M. Rochard on account of the very favorable results obtained by Dr. Louis Strohmeier Little, of the Shanghai Hospital, China, who was led to its adoption by the failure of 19 out of 20 operations performed by him according to the older methods. Dr. Little practiced aspiration in order to arrive at a correct diagnosis; but not as a method of treatment. After the employment of free incisions with full antiseptic precautions, his next operations, three in number, were all successful.

The following summary represents the results of my investigations in regard to the surgical treatment of abscess of the liver: 1. The liver should always be aspirated in a case of suspected abscess, in order to verify the diagnosis. 2. Many small and a few large abscesses have been cured by one or more aspirations; hence this method should always be employed at the first exploration, and we should then wait until it refills. If the pus collects slowly and in small amounts, it may be again aspirated; if quickly and in large quantities, aspiration is not to be relied upon. 3. Incisions should be made into the abscess cavity at the most prominent portion of the tumor, whether in an intercostal space or not; and irrespective of the presence or absence of adhesions. 4. Rigid antiseptic precautions add much to the safety and certainty of a successful result. 5. When Listerism is impracticable, good results will generally be obtained by simple incision or puncture by a trocar and canula, followed by the introduction of a drainage tube, and the daily use of carbolized injections. 6. Any of these methods are preferable to leaving the case to nature.



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